

RINA celebrates
10 years of green

Key industry
players' vision

How to manage
cybersecurity risks

RINAUTIC



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MAGAZINE

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Editorial

Welcome to RINAUTIC, our newsletter covering the latest trends and developments in the yachting world. This edition profiles key industry players from San Lorenzo Shipyard, Zuccon International Project, Rossinavi, MYBA The Worldwide Yachting Association and Amico & Co. Each offers thought-provoking insights into how to succeed in the context of rising competition, rapid technological development and ever-higher customer expectations.

As well as a global picture of the superyacht industry's current state and future possibilities, RINA experts tackle several hot topics: cybersecurity risks, implementation of the BWM convention and what "comfort" on a yacht really means. You'll also find out about RINA's 10 years of green certification, the recent success of our Piraeus office and a new RINA Academy training initiative in collaboration with the Yacht Club de Monaco.

Read on to learn about these developments and more.

Superyacht outlook



The global order book for superyachts continues to cruise at a steady pace this year, with interesting trends towards larger vessels and more high-tech engineering.

Although the 30 to 45-metre sector remains the core of the industry in terms of delivery numbers, we are seeing increasing demand for larger yachts over 60 metres. Around 40 mega yachts over 80 metres are under construction or being delivered this year. The large-project segment has boosted figures in Germany in particular, which leads the field in terms of gross tonnage. In terms of units, however, Italian shipyards remain the market leaders with a 45% share of the global order book.

The trend for explorer or expedition yachts is growing. New generations are less interested in sunbathing or wining-and-dining, and more in adventurous sailing experiences such as cruising and diving in exotic destinations. A number of yards are now specialising in expedition yachts, which are often built to ice class and require specific features including helicopter pads, diving tenders and submarines.

A large fleet and low prices mean interesting opportunities in the pre-owned yacht market, which is in turn boosting the refit and conversion sector. RINA is heavily involved in overseeing upgrades and refits to meet new environmental and safety standards such as the BWM Convention. Many owners even wish to exceed required standards. Demand for RINA's additional class notations for environmental aspects, including Green Plus and Hybrid Propulsion, indicates a widespread desire to own a truly "green" vessel.

Along with environmental aspects, comfort is a major driver of innovation in superyacht design. Our consulting engineering services, in particular our specialist noise and vibration expertise, are increasingly requested as yachtbuilders strive to push the boundaries and meet the high standards of onboard comfort expected by today's owners.

A significant trend is to build or refit yachts, particularly those over 40 metres, according to the Charter Code. The charter market is expected to remain strong in Europe, the US and the Middle East.

"Self-sailing yachts" may not yet exist, but technology is certainly lowering the barriers to entry into the yachting world. The so-called Internet of Things (IoT) will transform the yachting industry. Automation already makes it easier to navigate and control a yacht safely, so fewer crew members may be needed in coming years. Technical improvements such as joysticks and the azipod system allow less experienced owners to sail and berth smaller yachts themselves. We may see more newcomers as a result.

The most crucial challenge for all in the superyacht industry right now is to constantly raise quality standards. A product at this price should be delivered in perfect condition and come with perfect after-sales service. RINA of course is involved and fully committed to this ideal and the process to reach it. Innovation and technological advance are the keys to unlocking this challenge and securing our future.

Massimo Perotti

Creative solutions to every puzzle

Every crisis contains the seeds of opportunity. Each time the yachting industry goes through a difficult period, it forces us to fish deep within ourselves and find the best synergies and solutions to carry us forward. This strategy is working well for us: new owners are joining our existing customer base and we've expanded rapidly in terms of production, investment and workforce. I sometimes feel like a puzzle master, sitting in front of an increasingly complex jigsaw puzzle and finding the right place for each piece. I must admit, it's a fun puzzle to solve.

Progress doesn't mean abandoning our roots, but rather focusing even more on production, quality and improving our facilities and organisation. Sanlorenzo has sold 750 boats over the last 60 years, but not to 750 different owners. Some loyal customers have purchased four or five Sanlorenzos, or have upgraded or switched from our SL line (planing hull) to our SD line (semi-displacement hull) or vice versa. These repeat customers stay with Sanlorenzo for our values - uniqueness, craftsmanship, classic style, understatement and high quality. We in turn develop a personal relationship with our clients and follow their needs and desires closely. As they grow and change, we grow and change too.

Our acquisition of the historical San Marco shipyard in La Spezia last year is a leap in this direction. This 50,000 sqm site is now our third production facility, joining the existing facilities at Ameglia and Viareggio. The La Spezia site is dedicated to our largest metal superyachts and the new-concept SX line, which is a revolution in a world where radical changes are not so common. We hope, in this way, to keep serving our loyal customers and also attract new owners who care about quality and reliability.

Quality, reliability and high construction standards are of course the cornerstone of successful yacht building. This is where North European shipyards in particular

BIOGRAPHY

Chairman, Sanlorenzo S.p.A.

Born in Turin, Italy in 1960, Massimo Perotti graduated in Economics at the University of Turin in 1984 with full marks. He then worked at Azimut for several years alongside the founder, Paolo Vitelli, becoming manager in 1992. During the next years he contributed to the impressive growth of the company, which became the Azimut Benetti Group with several brands (Benetti, Gobbi-Atlantis) and ambitious projects including two marinas.

In 2004, Massimo Perotti purchased Sanlorenzo SpA. Maintaining the same style and customer focus that had made Sanlorenzo unique, he turned the company into a highly successful worldwide concern. A fundamental step in this process was the creation of innovative new yacht models, such as the semi-displacement boats launched in 2008.

Massimo Perotti served as President of UCINA (Italian Boatbuilders Association) in 2014. He was honoured with the World Yacht Trophy award, "Personality of the Year", in 2016. In 2017, he was nominated for the Knight of the Order of Merit for Labour by the President of the Republic, Sergio Mattarella.



Courtesy of Sanlorenzo



Courtesy of Sanlorenzo

excel. I'd like to propose, however, that Italian style and creativity are aspects that should be treasured and nurtured if we wish to continue contributing new features to the nautical world. The creative side of my job still fascinates me after all these years. I love to see the birth of a new model, to pore over drawings with my colleagues and discuss, improve, improve again... until we finally see on paper, and later in the water, exactly what we had in mind.

There are so many synergies within the world of Italian creativity, art and design. To take just one example, we recently connected with the Italian art world by bringing Sanlorenzos to two world-famous art exhibitions: Biennale di Venezia in Venice, Italy and Art Basel in Miami, USA. In Venice, a Sanlorenzo displayed some wonderful Boetti paintings, while in Miami, the yacht exhibited splendid works by Italian masters including Fontana, Castellani and Scheggi. As for the synergy between high-quality Italian yachts and high-quality Italian design, we are proud to point to our collaborations with Studio Lissoni and Studio Citterio-Viel, among others.

The future of yacht building remains bright as long as we continue to nurture creativity and refuse to compromise on quality, customisation and attention to the customer. It's also important to continually invest, not only in facilities and machinery but also in experts and top-notch surveyors. Sanlorenzo's personnel is technically outstanding yet always open to new ideas from experts in various fields.

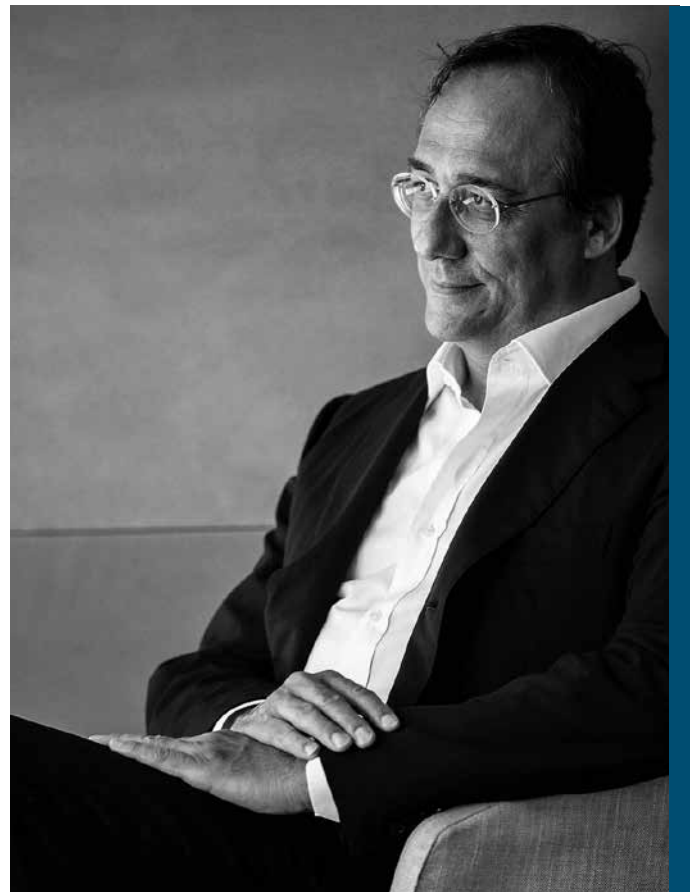
That's why RINA has always been an important partner for Sanlorenzo - and I have chosen the word "partner" carefully to underline our extremely positive relationship. The expertise of RINA's consultants and surveyors goes far beyond enforcing strict rules and regulations, and is essential in helping us achieve the top-quality results our customers demand.

If the future is bright, which are the brightest areas to aim for? We would love to see the Italian market on top again and we're working hard to bring it back there. Emerging economies are still emerging, but we believe there's a lot of potential and remain committed to our efforts in the APAC market.

Another important area of investment and development is the environment. We have already delivered a hybrid yacht and

are now developing hybrid propulsion systems for our larger vessels. Developing new technologies is time-consuming and resource-intensive, but worthwhile. Green is not just a word, it's a philosophy for the future.

Solving puzzles and being creative are the two main tasks - and joys - of my job. And I believe these are the skills we all need to help drive the industry forward towards our bright future.





Bernardo Zuccon

Innovative design, close collaboration

Success drives a desire to innovate and collaborate - which in turn drive success. It's a virtuous cycle we're happy to be in right now. A favourable market and increased demand for our design services has given us the ability to reinvest in our studio and in developing new products. We have been able to bring some talented new employees on board and are enlarging our headquarters. We're also expanding through collaboration and are hoping to sign new agreements in addition to our existing partnerships with Ferretti Group and its Custom Line brand. Our aim is to collaborate with more leading Italian brands, especially shipyards capable of building yachts of 70 metres and more.

Making an impact in competitive markets - particularly new areas of yacht design or those which are experiencing a rebirth - requires not just clever ideas but solid investment in research and experimentation. Innovation and technical development is at the core of our business, so it's heartening to see that forward-thinking shipyards are once again starting to invest serious time and funds in research. Research is the most important part of any design project, from identifying the theme to developing a structured concept with formal, stylistic and technological components. Outside of commercial projects with set requirements and production deadlines, there also needs to be space to experiment. That's why as a company we are investing significantly in R&D, with a new internal department dedicated to research and smart partnerships. Our 45m M/Y Picchiotti Heritage is a perfect example of a fruitful collaboration between ourselves and Picchiotti Yachts.

On the one hand, in research it's important not to limit ideas and innovation. On the other hand, it's important for a designer to consider all possible restrictions on a yacht's design right from the beginning of the process. Restrictions might be in the form of class or flag rules, or increasingly strict international standards. Safety on board is of course a hot topic (and getting hotter) because modern yachts need to

BIOGRAPHY

Bernardo Zuccon, Designer at Zuccon International Project and Zuccon Superyacht Design

Bernardo Zuccon, born in 1982, graduated with honours from the "Valle Giulia" faculty of architecture at the "La Sapienza" University in Rome, and has been active with Zuccon International Project since 2007, dealing mainly with yacht and boat design.

Since 2006, he has simultaneously been the research assistant for the architectural planning courses at the "Valle Giulia" faculty of architecture in Rome.



be built in compliance with the very highest safety requirements and standards. That's one reason we like to work closely with class societies. We need to understand the rules perfectly and we appreciate detailed supervision to ensure that our client will be safe from harm in the future.

That's not the only reason we have a positive relationship with RINA, however. A designer is not just a soldier, doing what he is told to do, and design choices shouldn't be imposed by the rules. Rather, we need a better interaction between design and rules, and working together with experts from a class society helps us to achieve this. One example is the layout of crew areas, where acoustic insulation between crew spaces and guest cabins is a major comfort issue. RINA's parameters encourage the use of certain technical components that will surely increase comfort.

We need innovation and collaboration with high-quality shipyards that can handle large projects, as well as with class societies and consulting engineers. And we will need them even more in the coming years if we are to handle the "gigantism mania" that is sweeping over the industry. Many companies are now going in

the superyacht direction and I predict that the average length of new yachts will continue to grow.

Apart from size, what will the yacht of the future look like? Well, increasingly we're concerned less with what it looks like and more with how it functions and its effect on the environment. As designers and participants in this industry, we have a moral (not just legal) duty to be more responsible in terms of sustainability. Yachts will have environmental considerations built into the entire life cycle, from the choice of propulsion system to their recycling and disposal. The materials being used in yacht building are also changing as new technologies are developed. Several shipyards that used to work with fibreglass are now working with metal.

Essentially, the yacht of the future will be transformable to cope with unforeseen demands, developments and challenges. Thanks to technology, it will open up the seas sustainably to more people and in new ways. Our role as designers - both in specific projects and in the sector as a whole - is to collaborate, research and innovate with the aim of helping owners experience life at sea at its best.



Rossinavi

“Perfection” is different from owner to owner

Every shipbuilder will tell you how demanding and fast-paced their own sector has become in recent years. The field of luxury yacht building, however, deserves a place at the top. An increasingly younger customer base is now requesting a superyacht that is not just “custom” but absolutely unique, with high-tech design solutions providing flexibility, guaranteed high quality and environmental sustainability. Being good is no longer good enough. In the context of rising competition, customers are also demanding faster delivery times.

We meet those challenges head on by owning the value chain, from the initial design to the finished boat. Every element, from mechanical components to accessories, is designed and produced in-house in one of our three yards. This is the only way we can guarantee quality and availability. In-house production also allows us to innovate and continuously improve our parts and processes to satisfy customer demands. How can a shipbuilder push the boundaries and strive for perfection when he relies on outsourced work or components subcontracted from suppliers?

Owning the entire value chain allows us great versatility. Since we are not reliant upon particular suppliers, we are not restricted to churning out similar designs. In 2017, for example, we have produced two yachts with centreline propulsion, two

with water jets and two with pods powered by diesel-electric engines. Versatility allows us to create unique boats that embody the owner’s wishes and satisfy their high expectations.

Of course, innovation and versatility require the very best technology available. We invest significantly in our workshops, with modern machines and high-tech workstations in all three of our sites: Polo Nautico and DR12 in the Viareggio harbour, and our newer Pisa production site with access to the sea and Port of Livorno via the Navicelli channel. The new industrial building in Pisa, in front of the historic area where we build and fit large hulls and superstructures, contains a state-of-the-art CNC pantograph for cutting sheet metal. Equipment like this allows us to continue crafting all of our own components and guarantee faster production times. This will become especially important in the next few years, as demand for mega yachts over 70 metres grows.

Demand for fast production times is an issue for the whole industry. Quality needs time. However, technology is advancing so fast that a yacht that takes four years to build may not be on the cutting edge by the time it’s handed over. That’s not acceptable to customers who are becoming increasingly younger and more tech-savvy. According to a survey we carried out in collaboration with the International University of Monaco,



HISTORY

Rossinavi, yacht shipyard based in Viareggio

The Rossi Shipyard, in the '70s, was a business based on carpentry and mechanics. In the family history, the expert knowledge of materials and means was at the cutting edge of ideas in construction and working relations.

This is what the ROSSINAVI brand emerged from. Each motor yacht, totally custom-made, is designed and made to measure on the basis of the needs of an individual vision to achieve a floating masterpiece. New styles and old-style personalities come together.

Today is a time of substantial, material realities elevated to a symbol, a brand that opens itself to the world with an innovative tradition.



Courtesy of Rossinavi

over the next 20 years the average age of superyacht owners will decrease by 10 years, from 45-55 to 35-45. Investing in technology and working with experts to anticipate the future can help us to overcome this challenge and satisfy both today's and tomorrow's customers.

A major area of concern for customers now and in the future is sustainability, both in terms of environmental regulations and customer requirements. Some examples from our yards are the use of eco-friendly paints and a new sustainable metal processing method, in which every scrap of metal is recycled. We focus closely on developments in environmentally friendly fuel systems and have won RINA's annual Green Plus awards several times.

Technology and facilities are nothing without skilled personnel to operate them. This is one reason it's so good to be based in Italy, renowned for its attention to high-quality design, performance and comfort. Our highly skilled staff work with energy and passion on every stage of a project, from the

original design concept to the implementation. We like to think that they feel the same passion as ourselves (Ed. Claudio and Paride Rossi, co-founders), which remains as strong as it was in 1980 when we embarked on our journey together.

As well as our staff, we also appreciate our collaboration with RINA's experts. They conduct extensive, efficient and smart tests, both during the construction phase and on board before final certification and handover. Together, we solve difficulties and find innovative solutions, a particularly important aspect in our business model with its focus on unique custom designs. All of this adds value and provides reassurance to both the customer and ourselves that everything is as perfect as it possibly can be.

"Perfection" is different for every yacht owner, which is why only a focus on creating unique custom yachts can provide it every time.



Courtesy of Rossinavi

Fiona Maureso

Working together to shape our future

In a fast-flowing industry, it makes sense to anchor oneself to solid principles. MYBA was founded by six yacht brokers in 1984, back in the days when deals could be done on a nod and a handshake. Anticipating the industry's growing professionalism, they drew up a standard contract for the sale and purchase of yachts. The document evolved into the MYBA Memorandum of Agreement, which is still, along with the MYBA Charter Agreement, a tried and trusted, industry-standard contract.

Fast-forward 33 years and the Association has gone from six brokers to 130 member companies representing yacht brokerage, charter and management. We now provide a wide range of tools for the industry, lobby on tax and law issues, and host events and seminars for both members and non-members. I've been involved with MYBA since 1986, so I've personally witnessed these changes and am proud to have been involved in many of them.

MYBA may have evolved beyond recognition, but our founding principles - high ethical and professional standards, education and collaboration - remain central to our mission. We are still run by members for members and for the benefit of the industry, with myself and other board members volunteering significant time and expertise. Our strict membership criteria are in line with the high standards we promote.

As an association made up of experts close to the ground, MYBA's evolution reflects that of the industry. Nowhere is this more important than in education and training. Brokers in the past learnt their trade by working with a more experienced broker, but these days many people come fresh to the industry or step sideways from another field. Our Superyacht Brokers Seminar, held annually in Nice, is an intensive three-day crash course in the basics of yacht brokerage, charter and

BIOGRAPHY

*President of MYBA, The Worldwide Yachting Association
Charter Director Europe, Northrop & Johnson*

Born and educated in the UK, Fiona moved to France in her early 20s and worked briefly as yacht crew before moving ashore into yacht brokerage and charter. With over 25 years' experience as a charter broker, Fiona is one of the most senior and well-respected professionals in the superyacht industry today. She has been an active MYBA member from the early days of the Association, serving on several committees before being elected President in 2014. The main goals of her presidency are ensuring that the legacy of MYBA is passed on to the next generation, and working more closely with other associations to protect the interests of the industry going forward.



Courtesy of MYBA



management. It has proven so successful that, for the first time, we will be hosting one in Florida later this year and have plans for another in London in early 2018.

The fast-changing nature of the industry means education is not just for new entrants. We keep our members up to date with anything that may impact business, such as changes in any relevant laws or tax regulations. And a new MYBA competency standard, which we are introducing later this year, will formalise our mission to improve skills and foster high standards.

Working together with other prominent and respected organisations helps us offer this high-quality training in specialised areas. We're planning a seminar in conjunction with the RINA Academy, to be held in October in Monaco on topics including yacht management and surveying. We're also working with the PYA to try and ensure there are enough properly trained crew to serve the needs of the rapidly growing fleet - and increasing size of yachts within the fleet. An important part of our mission is to help ensure that the highest possible standards are maintained throughout the superyacht industry.

Collaboration and learning are the main focus of the annual MYBA Charter Show in April. Based on member feedback, we moved this year's event from Genoa to Barcelona, where we'll remain for at least the next two years or more. As usual, the B2B event buzzed with charter brokers, captains, crew and suppliers getting to know each other's products, networking and learning about new market developments.

When one looks around at the MYBA Charter Show or MYBA Pop-Up Superyacht Show in Montenegro, or any other MYBA-supported event, one realises just how important it is to work together to shape the future of the industry in a way that benefits us all. Legislation is a major part of this. The European Commission and national governments sometimes bring in laws and regulations without a clear understanding of how the yacht industry works and without regard for the consequences. At MYBA we spend a lot of time listening to and reaching out to our members, then lobbying to ensure legislation does not negatively impact the industry and the people whose livelihoods depend on it.

MYBA has kept a fairly low profile in the past, but that's another

thing that's changing. If we want to influence legislation, we need a strong voice to speak out. When we tell political decision-makers that we represent 130 companies worldwide and 70% of the world's charter fleet, they listen to us. The power of MYBA to shape the future of our industry lies in the engagement of our members and in sticking to those core principles - high standards, education and collaboration - whatever choppy waters we face.



Alberto Amico

Why the yacht refit market is booming

The refit market for superyachts is thriving and it's easy to see why. The fleet continues to grow and there are good opportunities on pre-owned yachts that the owner can refit and upgrade in a short time for a fair price. New buildings require more time and resources and necessarily have inflexible schedules. Owners who desire customised yachts that meet the highest safety and environmental standards are increasingly embracing the benefits of the refit solution.

Our specialised superyacht refit yard is seeing ever-greater demand, but the nature of the demand is changing. For larger yachts and bigger refit projects, most clients are now organised with qualified consultants and managers. As a result, the design and bidding process is better managed. Clients pay more attention to reliability, quality and technical capability - which should always be the key criteria for choosing a yard. A particular area in which clients are paying more and more attention is the environment. Owners recognise that meeting high environmental standards generally improves life on board. Plus, they like the idea of preserving our natural world and using its resources sustainably.

Our biggest challenge in the face of this increased demand will be maintaining the high standards that keep our clients coming back year after year. The yard has been working almost flat out at full capacity over the last three years. We have expanded our activities into large refits, so we are seeing an influx of mega yachts requiring ambitious refit projects. In my role, I spend a lot of time focusing on developing the skills of our employees so that we stay on the cutting edge of the refit business. I also coordinate projects to improve efficiency, supervise the projects and ensure quality control. I am constantly considering and installing new facilities so that our yard can accommodate all client requests, however technically demanding or unexpected.

BIOGRAPHY

Chairman of Amico & Co

Born in Genoa in 1963, Alberto Amico has been interested in the sea, fishing and nautical engineering from an early age. He graduated with honours in Electrical Engineering and Automation from Genoa University in 1988. After a year at a nautical engineering company he joined Luigi Amico Srl, the family company founded in 1885, working in ship repair in the Port of Genoa.

In 1990, anticipating growth in the yacht market, he designed an innovative refit shipyard for superyachts. With the support of his father Guido Amico, he founded and started running the Amico & Co shipyard in 1991. In 2010 he opened a second shipyard, Amico Loano, on the Western Ligurian Riviera. Alberto Amico continues as President and Operations Manager of both shipyards, which have grown in both reputation and activity to become one of the top three refit and repair yards worldwide, with Amico & Co becoming an affiliate of Altgamma Foundation.

Alberto Amico is Vice President of Nautica Italiana. He holds a yacht captain's licence and is married with three children.



Courtesy of Amico & Co



Courtesy of Amico & Co

The variety of vessels and clients is partly what makes refitting yachts so exciting. Motor yachts, sailing boats and traditional yachts all need the same close attention and care, and they must generally comply with similar standards and regulations. However, each yacht has a different character and different challenges, and each owner has their own passion. The focus may be on comfort, performance, appearance or tradition, or a combination of these. Take a classic yacht, always an interesting problem to solve. How do we improve comfort and ensure compliance with the latest standards while maintaining the traditional yacht's soul? Fitting the pieces of the puzzle together and transforming an older yacht into the owner's dream is our challenge.

The 92m P/Y Queen Miri, formerly Delma, is a shining example of the type of demanding refit project we undertake. Last year we completed this 80% rebuild and lengthening project to meet Passenger Yacht Code standards, in the record time of 18 months and for a reasonable overall price. The project aimed at achieving the highest standards of luxury: the vessel has one of the most extensive spas of any charter yacht in the global fleet and has cruised for two seasons without any issues, all of which has made the owner very happy.

To achieve these high standards – and to continue to achieve them in the face of growing demand – we need expert assistance, and this is where class societies and consulting engineers make a real difference. Of the 100+ projects we perform each year, most deal with class work and alterations that need class approval. We have developed an efficient and collaborative relationship with class surveyors over the years, resulting in a greater understanding of technical tasks and how the rules apply to them. Our technical office and project management teams also appreciate having experts on hand to consult with on new challenges or to find more efficient ways to achieve the best possible results.

RINA is one of the class registers with which we have frequent contact and a close working relationship. We feel their teams always give special attention to yacht clients and are both proactive and rapid in their assistance. In the refit business, this is crucial to productive teamwork, and ultimately to the long-term success of our projects and the satisfaction of our client owners.



RINA & YCM collaborate on training

As the yachting world develops at a dizzying rate, so do its training needs. RINA Academy is responding to these needs by extending and enriching its range of training courses dedicated to yachting. Each course has clear objectives and focuses on specific topics of real interest to operators, technicians and managers in the industry worldwide.

In this context, and encouraged by the success of a similar event last year in Antibes, RINA Academy held a yachting seminar at Yacht Club de Monaco on 9 February 2017. What was originally organised as a one-off occasion is now set to become an annual event where yachting experts and industry stakeholders from around the world can meet and discuss important current topics. This year's event was attended by the Italian Ambassador in Monaco, with participant speakers coming from Clyde & Co law firm, the Cayman Islands Shipping Registry, Malta Transport, Synergy Consulting and Genoa University, among others.

The key question for the morning round table was "how to keep up with the changing superyacht scenario", with participants considering the impacts of recent political and economic changes. In the afternoon, the focus changed to "new challenges and opportunities for a sustainable yachting industry". Topics included notation opportunities and training courses dedicated to environmentally sustainable techniques, and the forthcoming entry into force of the Ballast Water Management Convention. The 70 participants heard explanations of technical requirements and changes to be made on board to meet the standards, and discussed related issues with important consequences for the yachting sector.

A contribution regarding the development of a new RINA Class notation was well received by participants. The notation draws

on a recently introduced methodology for product development based on Life Cycle Assessment, which is useful in evaluating and measuring the environmental impacts of a product, then determining criteria and procedures to control those impacts and improve the overall environmental index.

The success of the event highlighted the opportunity for a high-profile project along similar lines. Earlier this summer, RINA Academy signed a collaboration agreement with La Belle Classe Academy, the Yacht Club de Monaco training centre for yachting professionals. The idea is to create a series of courses combining the two academies' respective competences in security, environmental protection and naval etiquette to encourage the development and promotion of yachting professions.

The courses will be aimed primarily at owners but open to anyone involved in yachting, including captains, crew members, managers, future owners and other interested parties. Thanks to this partnership, La Belle Classe Academy will be able to enrich its portfolio with training courses developed by highly skilled RINA experts on specific topics, such as ISM and BWM for yachts.

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Better Place - Wally



Tribù - Mondomarine



Exuma - Perini Navi

Celebrating 10 years of green

Ten years after RINA first introduced a green additional class notation for yachts, the standard has changed beyond recognition. It has changed because the environmental side of the superyacht sector has evolved in ways that few could foresee. That flexibility in adapting fast to industry developments and demands is why we are now celebrating its ten years of success.

The origins of our Green Plus additional class notation for superyachts, which is now voluntarily requested by around 80 percent of our owner clients for vessels over 40m, lie in the expedition sector. Explorer yachts in the mid-2000s faced local environmental protection laws a lot stricter than MARPOL requirements at that time. They came to us for advice, and later for certification. We officially launched the original Green Star notation in 2007. As a set of prescriptive requirements, Green Star had limited flexibility. Superyachts vary in design, size, needs. Owners themselves have varying interests. A checkbox system is not good at taking into account variation, encouraging innovation or rewarding owners for investing time and money in being green.

Introduced in 2011, our solution was a future-proof scheme to evaluate a yacht's overall environmental friendliness. It covers clearly defined areas of pollution – including sewage, garbage, ballast water, greenhouse gases and noise – and awards points for each. This framework allows owners to achieve different ratings (standard, gold and platinum) for the environmental impact of their yacht. We are pleasantly surprised at how many owners voluntarily wish to do more for the environment. Some now employ environmental officers and submit environmental management plans. As a flexible framework, Green Plus both drives and leaves the door open to innovation. Game-changing technologies like scrubbers and hybrid engines were added to the notation as they appeared, along with innovative solutions in construction materials, energy/water management and propulsion. Designers are incorporating environmental aspects into the vessel's very concept, with new hydrodynamic bow designs and materials that can be easily recycled at the end of the yacht's life cycle.

We expect the next technological game-changer for superyachts will be energy storage, i.e. batteries, perhaps combined with fuel cells. But whatever is around the corner, our Green Plus notification will continue to evolve and help forward-thinking owners to build and refit environmentally friendly yachts.

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Green Evolution

IMO's Strategic Plan for the six-year period 2016-2021 adopted a resolution for the Organization, which took into account the implementation of the 2030 Agenda. One of the Strategic Directors stated:

"IMO will actively promote its role as the primary international forum on matters within its competence and ensure and strengthen the linkage between safe, secure, efficient and environmentally friendly maritime transportation, the development of global trade, the world economy, and the realization of new United Nations development agenda and the Sustainable Development Goals (SDGs)".

Our world is under strain and the "green" priority is one of the main topics on the international agenda. That is why world leaders are hard at work - UN Sustainable Development Summit, Global Risks Report, Conference of the Parties (COP), World Economic Forum, Commission for Social Development, etc. - on a new development model. Summarised in the Sustainable Development Goals (SDGs), this official model is known as Transforming our World: the 2030 Agenda for Sustainable Development.

Leaders of the yachting world are also working hard on these topics. During 2017, some conferences around the themes of environment and innovations were hosted at the Yacht Club de Monaco. The aim was to create positive, shared and optimistic approaches to the challenge of ecological intelligence in the maritime sector. These included the RINA Yachting Academy Seminar and Rendez-vous du Cluster Yachting.

A CHANGING WORLD

As global political shifts give way to a new world order, the role of citizens, businesses and policymakers in the pursuit of progress on the green agenda has also evolved. Today the engines of change are technology and innovation. The latest technological trends have the potential to streamline efforts in sustainability and help to drive progress. These changes mean new opportunities for all of us: businesses, governments, investors. In other words, the future is already hitting us. Of the diverse challenges we face today, the most immediate and important is how to understand and shape the new cultural paradigm, and to see it as exciting rather than frightening.

We are witnessing profound shifts across all industries, marked by the emergence of new business models, the disruption of established markets and the reshaping of production, consumption, transportation and service systems. New ways of using technology also offer the potential for supporting the regeneration and preservation of natural environments. The changes are historic in terms of their size, speed and scope. Their complexity and interconnectivity across sectors imply that all stakeholders have a responsibility to work together to better understand the emerging trends. It is critical that the yachting sector also invests attention and energy in multi-stakeholder cooperation across academic, social, political, national and industry boundaries.



Courtesy of VSY

Stella Maris has been authorized to navigate inside the marine protected area of Cinque Terre National Park for purposes of scientific research



YACHTING 4.0

The collaboration between RINA and Eulabor Institute is part of this mutual effort to develop concrete tools needed to participate in, and benefit from, the ongoing transformations. Within the context described so far, the Yachting 4.0 project mainly focuses on the production of luxury yachts, a market segment of high added value and complex one-of-a-kind ships. The segment has been identified by BESST (Breakthrough in European Ship and Shipbuilding Technologies) as a target for innovation in decreased life cycle costs, reduced environmental impact and improved safety.

In essence, RINA and Eulabor Institute look at the yacht as an incubator for innovation. Their collaboration aims to develop models, tools, methodologies and standards that, when applied to the vessel product chain, will allow a substantial reduction in the environmental and energy footprints of the shipbuilding sector. To this end, Eulabor Institute adopted the computational sustainability approach. It was the first time it was possible to implement a management support system, Yachting 4.0, that provides a comprehensive framework in which the best sustainability practices can be adopted from the design stage. More importantly, it also allows their impact to be continuously assessed and certified.

ENVIRONMENTAL FOOTPRINT NOTATION

Based on this innovative tool, RINA created the Environmental Footprint class notation, which can be considered an evolution of the well-known and appreciated Green Plus notation. It is a new approach and method based on the possibility of assessing the environmental impacts of the product along its entire life cycle. It is based on the LCA (Life Cycle Assessment) methodology for assessing environmental impacts and evaluates all the key indicators, making it a reference methodology for manufacturing and marketing increasingly "green" products.

The LCA forms the basis of eco-friendly product design. One reason is that it has the advantage of allowing the detection of critical environmental issues along the life cycle of the products and services. It also helps to detect the causes of the problems, which is the first step in solving them. By detecting the cause of a critical issue, it's possible to think to solutions in order to improve the environmental profile of the products. The LCA is key to testing new product designs that are intended to be more environmentally friendly.

Thanks to the methodology developed and the use of the Yachting 4.0 software, the shipyard will be able to recognise critical environmental issues along the life cycle of a yacht and gain a "baseline" understanding of its environmental impact. This will enable shipyards and suppliers to implement improvements in order to reduce the environmental impacts of their products - products that can then be approved and awarded with the new RINA class notation. The yacht will have new added value, which benefits not just the owner but all of us who share this planet: sustainability.

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Piraeus Yachting welcomes Golden Yachts



Courtesy of Golden Yachts

The Piraeus Yachting Team of RINA Hellas has continued on its path of growth and success in 2017. Several significant projects are helping to demonstrate the team's expertise in the new building and refitting sectors of superyachts in Greece.

Notable among these projects is the classification of the Golden Yachts M/Y O'Natalina. The 52m custom motor yacht was designed and engineered by Italian yacht builder Picchiotti in 1985 and later refitted in 1996. Earlier this year, it was overhauled by Golden Yachts under RINA's supervision at the specialised Halkitis Shipyard in Piraeus.

Golden Yachts specializes in luxury and custom yacht construction, with an impressive collection of yachts ranging from 28m to 93m successful constructed since 1995. A large team of naval architects, marine engineers and project managers help to attain the highest standards in design and engineering.

Close collaboration with experts from classification societies such as RINA give the owner confidence that the vessels not only achieve the highest standards in terms of performance and comfort, but also comply fully with SOLAS and MCA rules.

Shipowner Capt. Paris Dragnis, founder of Goldenport Shipmanagement and its affiliate Golden Yachts, has long cooperated with RINA in the cargo ships sector. However, this is the first time one of the company's superyachts has been classed by RINA.

A range of other clients are increasingly requesting classification

and certification services for their large yachts. The Piraeus Yachting Team and its expert surveyors, many based in strategic locations around Greece like Limassol, Kos, Thessaloniki and Corfu, provide 24/7 services to support these clients.

Earlier this year, the team successfully followed up the refit of M/Y Ancallia, winner of the Best Rebuilt Yacht category at the 2015 World Superyacht Awards. A current refit project for M/Y XANA (previously Ouranos Too) aims to achieve these same top standards. The XANA, a 40m Codecasa motor yacht, is undergoing major interior and exterior upgrades and modifications in order to comply with the LY3 code of the UK's Maritime & Coastguard Agency (MCA).

The Greek yachting sector is expected to grow in line with the continued increase in tourism, with more yachts using Greek marinas as home ports. The MaRINA Excellence certification scheme, covering quality, sustainability and risk management, is sure to be in demand in the coming months.

High standards go hand in hand with education, training and outreach. Yacht training in cooperation with the RINA Academy will take place this winter at the RINA Piraeus office. A collaboration with international yacht magazine Skipper on Deck will also help to give the team more visibility. In addition, you'll find members of the team present at all the important yacht shows and events in Greece and Cyprus, including the annual Mediterranean Yacht Show.

When onboard systems get sick...

BE CYBER-AWARE AT SEA

Illness can spoil a sailing holiday – but now we also have to worry about computers getting sick. Yachts, and those of us who operate them, increasingly rely on digital technologies. When these are infected by a virus or suffer a cyber attack, we can expect a bumpy ride.

Cyber risks are a universal and daily part of life. We are at risk every time we connect to the internet – at home, in the office, and via a marina's WiFi or an onboard satellite connection. We have seen the devastation caused by recent cyber attacks on major organisations based on dry land. An attack on a yacht's vital, vulnerable onboard systems can have immediate and dangerous consequences for safety and data security. The most common type of cyber attack is an "opportunistic" attack from malware – such as a virus – that spreads across the internet via email or other connections to infected systems. The purpose is to exploit the vulnerabilities of as many systems as possible, either to profit financially or to obtain access rights like passwords. The cause may be as trivial as someone using a default password, or clicking on an unsafe email or website. Unsecured WiFi networks also allow criminals to "sniff" data being transmitted across the network. Onboard systems that are not adequately protected may be damaged or blocked.

Less common but more serious, "targeted" attacks focus on specific systems and may cause severe financial damage by stealing valuable information. A targeted attack may follow an opportunistic one, especially if a password is stolen or the first attack is not detected. The attackers invest time and effort learning how the system works, so they usually know what they want to steal and hope to get a good return on their "investment".

Even with technically well-protected systems, a simple human action can open the door to the attacker. Personal data, such as names, dates of birth, membership of organisations or interests, can be used to design targeted attacks. For example, an email can be customised to entice the recipient to click on a link or open an attachment that contains malware. Once the malicious software has entered the network, it can penetrate deep into the yacht's systems and access valuable information.

At RINA we greatly encourage awareness of cyber risks and are developing a security lifecycle management process to help safeguard a yacht's vital systems and data. The process is based on the "security by design" paradigm, which ensures security is built into devices, networks and systems from the beginning and maintained throughout their lifecycle. Designed and carried out by interdisciplinary RINA teams, it integrates business analytics, information security management systems, security system engineering, human factors and training.

Awareness is the best way to prevent cyber attacks. RINA Academy offers two specific training courses for onboard cyber security: a basic awareness course for seafarers and ship operators, and an advanced course for operators with IT duties. Both courses cover cyber risk assessment and help participants better evaluate cyber threats, be prepared and be vigilant in keeping unauthorised software away from a vessel's systems.



Implementing the BWM Convention

Due to enter into force on 8 September 2017, the Ballast Water Management Convention has wide-ranging impacts yet is still the subject of uncertainty and discussion.

The BWM Convention aims to minimise the transfer of harmful aquatic organisms and pathogens in ballast water. Adopted in 2004 and ratified on 8 September 2016, it stipulates two required standards for discharged ballast water: D-1 relating to ballast water exchange and D-2 relating to treatment. The D-2 requirement is most commonly met by installing a Ballast Water Management System (BWMS).

Shipyards, yacht owners, operators and managers are responsible for implementing the new requirements and obtaining the relevant certificates. As both new and existing vessels are affected, all are sensitive to last-minute amendments, interpretations or additional flag interpretations.

Among these is a decision by the IMO Marine Environment Protection Committee (MEPC 71), which compromises on compliance dates for ballast water discharge and tentatively accepts an amended implementation scheme for the D-2 standard. The scheme will be circulated to Member States for adoption during MEPC 72 in early 2018. However, the Committee recommended its immediate application to avoid a dual-treaty regime during the time between the entry into force of the Convention and of the amendment.

Under this proposal, existing ships with the renewal of the IOPP

certificate between 8 September 2017 and 8 September 2019 must comply with the D-2 standard at the second renewal survey after the Convention enters into force. Existing ships with the IOPP renewal after 8 September 2019 must comply at the first renewal survey after the Convention enters into force.

A new clause prevents ships in this last category from bringing forward the IOPP certificate renewal to between 8 September 2017 and 8 September 2019. Existing ships not subject to the IOPP renewal survey must comply not later than 8 September 2024.

There are two pieces of good news. First, the market is responding with new technical solutions to fulfil IMO Convention or US requirements in more efficient ways. Second, RINA Academy offers various courses and training events concerning Ballast Water Management, covering both rules and technical solutions. All are kept fully up to date with new amendments, interpretations and additional flag requirements.

Among all the training options offered by RINA Academy, the BWM courses are bestsellers. Standard courses, customised presentations and seminars have been held all over the world, from Monaco to Dubai to Shanghai. Partly due to the topic's importance and uncertainty, and partly due to the presence of experts and stakeholders from all sides of the globe, these sessions have always attracted great interest and knowledgeable debate.

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New Comfort class notation for yachts

RINA's additional Comfort class notation covering noise and vibration, originally developed for cruise ships, is now available for large yachts. The voluntary notation goes above and beyond the IMO standard, "Code on Noise Levels on Board Ships", with the aim of satisfying the high expectations of today's luxury yacht owners and passengers.

The standards are high. Out of more than 60 pleasure craft to have received RINA's Comfort class notation, only one yacht so far has achieved 100%: the Genesi, a 47m superyacht with diesel-electric propulsion. Built by Italian yacht builder Wider and delivered in April 2016, it can run at 14 knots so quietly and smoothly that passengers have to look out of the window to realise they're underway. Both COMF-Y (for yachts) and COMF-LY (for large yachts over 60m) are already in high demand by yacht owners and boatyards wishing to increase the prestige and value of their vessels.

What does "comfort" on a yacht mean? One might think that reducing noise and vibration to an absolute minimum is the ultimate aim, but it's not that simple. Removing all background noise, even if technically possible, means there's nothing to filter out any unexpected noises. The first Rolls Royce prototype was allegedly so quiet that at 60mph the loudest noise was the tick of the clock. Masterful engineering for sure, but that ticking clock could quickly become annoying.

The Rolls Royce example illustrates how noise and vibration

engineering is neither easy nor obvious. Nor is it a simple matter to transfer noise and vibration standards from massive cruise ships, which see very little difference in noise and vibrations whether they are at anchor or sailing, to smaller, high-performance luxury yachts. COMF-Y and COMF-LY have been tailored to provide - as closely as possible - the highest possible comfort levels both in port and at sea, for a wide range of speeds.

RINA's expertise in measuring, certifying and advising on noise and vibration levels has been built up over many years. An extremely sensitive accelerometer is used to measure structural vibrations instantaneously, either throughout the vessel or in the areas in which passengers spend the most time. Hypersensitive microphones record sound pressure levels, the main parameter detected by the human ear.

The process should start from the design phase if possible. Thanks to data from many thousands of measurements across hundreds of vessels, RINA has developed accurate 3D statistical modelling processes to predict noise and vibration levels of a particular design. This is of great help to designers and shipyards, who can adjust their design to meet the desired standards before construction begins. RINA can then survey the construction and conduct extensive sea trials to ensure the final yacht meets those standards.

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The voice of Masters

Can you provide a picture of your experience with RINA yachting class, your feelings and any suggestions?



CAPTAIN SAM SROUR
M/Y EMOTION2

During the winter season 2016/17, we performed our 10-year survey and a refit of M/Y Emotion2 in the Sud Marine Shipyard of Marseille. It was a long and challenging job that would have been far more difficult without the support and assistance of RINA's surveyor. Following a detailed plan of the refit, RINA personnel were eager to give us the right advice and time required to flawlessly complete the enormous amount of work.

Communication plays a key role in all major refitting projects. Without it, captains, crew and contractors tend to move blindly with a lot of effort and weak results. We planned the work that needed to be done well in advance. After doing so, we realised we needed to have frequent and punctual exchanges with surveyors in order to stay easily within our schedule while doing an excellent job.

Owners and management tend to be more relaxed when crew work in connection with class certifiers and surveyors, especially when the stakes are particularly high. It is also important to consider the inevitable problems that arise every time major works in a shipyard are scheduled. Such problems are generally unpredictable, but they can considerably slow down the entire process. Having a direct line to surveyors, with immediate availability, for intervention in such cases is the difference between success and failure.

In the end, our project has been a beautiful success. Everybody (shipyard personnel, crew, contractors) outperformed all expectations and that has been made possible thanks to the continuous communication and exchange with RINA people.

As a captain I will always rely to their services, experience and skills.



CAPTAIN RICCARDO MARTINELLI
M/Y MAIN

We've been collaborating with RINA for more than 15 years. Their support was particularly essential as surveyors in the shipyard 10 years ago during the construction of the last 65-metre superyacht MAIN, when they were purposely chosen by the shipowner. All the technicians and surveyors assigned were extremely competent and provided highly specialised service.

This year we've completed the second class survey, during which the RINA team has helped us to comply with new upcoming regulations such as the BWM Convention.

Their help has always been vital, as has their expertise and professionalism. They offer special attention, kindness and a very high level of cooperation in attending meetings both on board and at their headquarters in Genoa.

My compliments also go to RINA Academy for the professionalism of the instructors and the high quality of the technical courses offered. These successfully aim to improve the competence of nautical staff and are always in line with the yacht industry's latest developments.

I can state that I have an excellent experience with RINA and am willing to cooperate further with their team. I would strongly recommend RINA as a classification society to all owners and management companies looking for highly qualified surveyors.

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